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The Firm of Karl F. Ross, P.C.

21527

JUN 30 2004

IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor	Lothar KÜMPEL	
Patent App.	09/601,014	
Filed	24 July 2000	Conf. No. 4353
For	SYSTEM FOR MAKING FOLDED BOXES FROM BLANKS	
Art Unit	3721	Examiner Huynh, L

Hon. Commissioner of Patents
Box 1450
Alexandria, VA 22313-1450

Appealed 17-May-04

APPEAL BRIEF UNDER 37 CFR 1.192(a)

Now comes appellant by his duly authorized attorney and submits his brief under the provisions of 37 CFR 1.192(a).

REAL PARTY IN INTEREST

An Assignment filed 22 June 2004 at reel/frame 014765/0919 makes Heidelberger Druckmaschinen AG the real party in interest here.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

07/06/2004 AWONDAF1 00000143 09601014
01 FC:1402 330.00 OP

07/06/2004 AWONDAF1 00000144 09601014
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STATUS OF CLAIMS

The case contains five claims numbered 14 through 18 of which a true copy is enclosed in the Claim Appendix.

STATUS OF AMENDMENTS AFTER FINAL ACTION

There were no amendments after final action.

SUMMARY OF THE INVENTION

The instant invention is a box-making system comprising as a first element an existing box-making machine which has a conveyor passing through a series of work stations that each carry out a specific job and that each have a manually positionable machine element. Such manually adjustable box-making machines are enormously complex and expensive pieces of equipment that have very long service lives, so that many of them still exist and the owners of them do not want to replace them with more modern equipment, while at the same time the owners are of course interested in reducing some of the operating costs for such machines.

The second element of the instant invention is a modern computerized control system that is intended to be grafted onto a standard manually adjustable machine so that it can be operated at lower cost without, however, having to replace the entire machine.

It is important to note that the inventive two-element system is not intended to be marketed with or even compared to a brand-new computerized box-making machine; instead it is admittedly a patch arrangement intended to extend the service life of a machine whose only real drawback is that it takes considerable staff to operate.

Thus the instant invention comprises as shown in FIGS. 1 and 2 of the drawing the following:

a box-making machine comprising

a conveyor 2, 6, 10, and 13 for moving the blanks through a succession of working stations 1, 5, 8, 9, and 15;

a respective manually positionable machine element 3, 7, 11, or 14 at each of the stations 1, 5, 8, 9, or 15 for engaging the blanks; and

a respective position sensor 17 at each of the stations 1, 5, 8, 9, and 15 associated with the respective element 3, 7, 11, or 14 for determining an actual position of the respective element 3, 7, 11, or 14; and

a control system comprising

a central memory 18 located away from the working stations 1, 5, 8, 9, and 15 and holding respective desired positions for the elements 3, 7, 11, and 14;

a central computer 18 located away from the working stations 1, 5, 8, 9, and 15 and connected to the memory 18 and to the position sensors 17 for calculating differences between the

actual positions determined by the sensors 17 and the respective desired positions held by the memory 18; and

a respective local display device 20 at each working station 1, 5, 8, 9, or 15 connected to the central computer 18 for showing the respective difference between the respective actual position and the respective desired position, whereby an operator of the machine can manually position the elements 3, 7, 11, and 14 in accordance with the difference displayed by the local display device 20 at each element 3, 7, 11, or 14.

Thus with the system of this invention when, for instance, product format changes, the machine operator need merely move from one work station to the next and reset its manually positionable element according to what is shown at that station's display. This is in contrast to the prior-art system where the operator had to consult a complex chart or handbook, and then determine whether, for instance, a given element should be screwed in or out and how much. It has been found that the inventive system not only is a huge time saver, but also almost completely eliminates error. It allows a relatively unskilled person to reset a machine accurately and quickly, simply moving from station to station and adjusting each element until the respective display reads zero. At the same time the original proven piece of equipment is retained and is not subject to any substantial retrofitting other than mounting a display and position sensor at each station,

something that will not affect how the machine works when in production.

Claims 14 and 18 describe the invention basically as outlined above, claim 14 being in standard American format and claiming the whole system and claim 18 being in improvement-style format.

Claim 15 recites how the computer not only calculates how much a given position element must be moved, but also in which direction, and displays the direction.

Claim 16 describes a bus system connecting the computer and memory, which normally are a single unit, to the sensors.

Claim 17 claims the computer and memory as separate units.

ISSUES

A first issue is whether all the claims are anticipated by a combination of the teachings of US patent 4,847,775 of Roch and US patent 5,435,360 of Mott.

A second issue is whether all the claims are anticipated by a combination of the teachings of US patent 4,554,777 of Denk and Mott.

CLAIM GROUPS

Claims 14, 16, and 17 and 18 form a first group.

Claim 15 forms a second group.

ARGUMENTS

Roch describes a machine with remotely set elements at the various stations whose positions are monitored centrally and that are reset by respective actuators at the individual stations but controlled by a central processor. This therefore represents one of the first of a standard line of machines shown in numerous cited but not applied references where all the stations can be reset centrally by the computer. It is a far cry from the machines that existed up to then, and that were so ruggedly built that they

are still in operation all over the world, and where the stations were manually adjustable and required a user to go from station to station to reset them. There are no "manually positionable machine elements" at each station, nor are there display devices at each station. Clearly, since this machine is fully automated, there would be no sense to make the individual adjustable elements manually adjustable also, and since there is no operator intervention at the stations, providing displays would be similarly unnecessary.

Denk is largely cumulative to Roch. It discloses a central system with a single display device. There is no way to say there is a respective display device at each work station when there is only one display and several stations. The Denk device does have the interesting idea of providing a roving display coupled with an actuator, but still does not in any way propose a plurality of displays as claimed in this case. Admittedly, Denk is another solution to the problem of a difficult manually controlled machine, but an altogether different one from the instant invention in that Denk uses a single display and a single actuator for operating a plurality of different elements. It is impossible to say that a reference which goes to great pains to show how it is possible to do something at several different places with a single display makes it obvious to provide individual displays at the different places; instead Denk teaches the opposite.

Mott, which was cited for the first time in the Final Action even though up to then the case already contained 23 references not counting Roch and Denk, shows a single machining station provided with a manually positionable element and a display that shows the position of the element relative to both first and second abutments. In practice the one display shows the actual element position and the other display a desired element positions. No mention of more than one such work station appears in Mott.

Regarding the combination of Roch and Denk, it is clear that this combination fails to show a plurality of work stations each having (1) a manually adjustable element, (2) a position sensor for the element, and (3) a display showing how to adjust the manually adjustable element, with the display and sensor connected to a central computer/memory that calculates the difference between the element's actual position and the desired position for the element and that feeds this information back to the respective display. Instead the combined system of Roch and Denk would go no further than to suggest doing away with the display at the station and replacing it with an actuator, so that the adjustment could be carried out wholly automatically. While such a system is very desirable, it is not readily applied to an existing manually adjustable machine. The combined system of Roch and Denk is clearly different from that of the instant invention as defined in

claims 14 and 18 in that there is simply no suggestion in either of these references to supply each station with its own display.

The combination of Denk and Mott is nowhere suggested in these references. Since Denk proposes combining the display and the actuator and moving it from station to station, it is clear that the function of the display is to let the roving technician know where to go so that he can allow the machine to carry out the adjustment, not show how to adjust the element at each station. If Denk and Mott were combined, the result would be an absurd system, with an actuator and display at each station. Since the actuator is centrally controlled, it would be absurd to also provide a display, as no human intervention is called for so no-one would ever look at the display. The rejection of claims 14 and 18 based on the combination of Denk and Mott is clearly based on hindsight; there is nothing in either of these references to suggest the combination of the instant invention. The only suggested combination would be a wholly automatic system like that of Roch.

Going further, none of the references suggests that the individual work-station display show which way to actuate the manually positionable element. In Mott relative positions are shown and the user must figure out which way to move the part. In Denk, the actuator coupled to the display does the actual adjust-

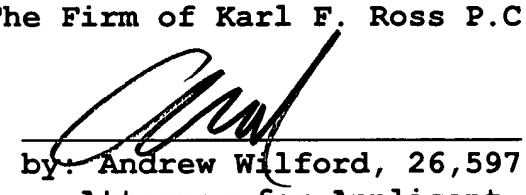
ment, so the user does not need to know which way to move it. Thus claim 15 is patentable in its own right.

Finally nothing in Roch, for instance, suggests applying his system to a preexisting machine with manually adjustable elements. Denk has no need for a bus, since the combined display/actuator is moved from station to station, and no bus is needed in Mott since each station's displays merely show the actual and desired positions, apparently independent of any central memory.

CONCLUSION

The combined references either do not show the features of the invention, or the combination represents a distortion of the teachings of the references and is purely based on hindsight.

Respectfully submitted,
The Firm of Karl F. Ross P.C.



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Enclosure: Enclosures:
PTO-2038 for appeal fee
Claim Appendix

CLAIM APPENDIX

14. A machine for making folded boxes from blanks, the machine comprising:

a conveyor for moving the blanks through a succession of working stations;

a respective manually positionable machine element at each of the stations for engaging the blanks;

a respective position sensor at each of the stations associated with the respective element for determining an actual position of the respective element;

a central memory located away from the working stations and holding respective desired positions for the elements;

a central computer located away from the working stations and connected to the memory and to the position sensors for calculating differences between the actual positions determined by the sensors and the respective desired positions held by the memory; and

a respective local display device at each working station connected to the central computer for displaying the respective difference between the respective actual position and the respective desired position, whereby an operator of the machine can

manually position the elements in accordance with the difference displayed by the local display device at each element.

15. The improved box-making machine defined in claim 14 wherein the central computer also calculates a direction in which the elements must be displaced to move to the desired positions and the local display devices show the respective directions at the respective elements.

16. The improved box-making machine defined in claim 14, further comprising

a bus system connecting the computer and memory to the sensors.

17. The improved box-making machine defined in claim 14 wherein the computer and memory are separate units.

18. In combination with a machine for making folded boxes from blanks, the machine having

a conveyor for moving the blanks through a succession of working stations;

a respective manually positionable machine element at each of the stations for engaging the blanks; and

a respective position sensor at each of the stations associated with the respective element for determining an actual position of the respective element;

a system comprising:

a central memory located away from the working stations and holding respective desired positions for the elements;

a central computer located away from the working stations and connected to the memory and to the position sensors for calculating differences between the actual positions determined by the sensors and the respective desired positions held by the memory; and

a respective local display device at each working station connected to the central computer for showing the respective difference between the respective actual position and the respective desired position, whereby an operator of the machine can manually position the elements in accordance with the difference displayed by the local display device at each element.